kelps, and sea-lettuce may be more conspicuous in some places. On rocks in deeper water the seaweeds are entirely red algae; these are as a rule seen only when they are dredged from the bottom or become caught in fish-nets.

In the north Pacific Ocean the seaweeds which attract attention are primarily the brown algae. Here, mostly at and below low tide-level, one finds giant kelps (Nereocystis, etc.), the bodies of which are longer than our highest trees. They present considerable variety in structure, and many of the larger ones possess bladders or floats, filled with gas, which buoy up the free ends. The rocks are covered with red algae quite different from those on the Atlantic coast, many attaining considerable size.

In shallow tropical and subtropical waters the striking species are often the calcareous seaweeds. These are mostly classed as green and red algae. The green algae present the bizarre shapes of shaving brushes, parasols, and mushrooms. The red algae (corallines) develop as fragile or stony branching masses or occur as crusts on rocks. These calcareous algae play a considerable role, along with the corals (which are animals), in the formation of coral islands and reefs.

Some seaweeds exist in unattached state in the warmer seas. Certain species of sargassum, branching brown seaweeds which possess small globular floats, so cover many square miles of the tropical Atlantic Ocean that a large area there has been called the Sargasso Sea. Reports are that these algae have at times been an impediment to navigation. Certain microscopic algae develop in such profusion as to cover the water with a scum or to color its upper layers markedly, as do the dinoflagellates and Trichodesmium. The latter alga grows aggregated into very small flakes that color the water blood-red, and it is said to be responsible for the naming of the Red Sea.

A small number of conspicuous algae grow in brackish ponds along low-lying coasts where the salt water is diluted periodically by rains, and also in the mouths of rivers where fresh water is mixed with salt. In such places most of the seaweeds are green algae: Enteromorpha, Ulva (sea-lettuce), and Cladophora. Certain red algae, especially species of Gracilaria, are often in evidence. Such habitats are occupied mainly by hundreds of species of sulfur bacteria and of microscopic algae: diatoms, flagellates, and blue-green algae.

The same type of vegetation is characteristic of harbors polluted by wastes from large cities. Ulva and Enteromorpha are the conspicuous seaweeds, sometimes to the exclusion of all others. It is here that most people become acquainted with the huge detached plants of the sea-lettuce, floating or cast up on shore among an unappetizing assortment of débris.

Though many of them attain massive size and the majority are large enough to attract the attention easily, the seaweeds are scarcely comparable with the flowering plants in shape and structure. Only a few—sargassums and some of the rockweeds and kelps—have organs which superficially resemble roots, stems, and leaves. Their cellular structure is very different. Not the least conspicuous feature about them is their color. Most seaweeds contain in every cell various chemical substances that mask the green coloring matter which they have in common with the cells of flowering plants. Since differences in methods of reproduction and certain features of internal structure and outward appearance go hand-in-hand with the type of coloring matter present, the seaweeds are classified according to their color. Thus the chief classes of algae are designated as the red, brown, green, and blue-green. The members of the last class are mostly small, developing as slimes on objects between tide-marks or as crusts on rocks in the salt spray above high tide-level; some, like the Trichodesmium mentioned above, give a distinctive color to the water where they occur in great numbers.

Among the red and green algae the plants are made up of fine or coarse threads or cords, variously branched; others are hollow tubes or delicate or tough membranes. The great variety of delicately branched forms has always been a matter of interest to those who enjoy making collections of beautiful and artistic natural objects.

IMPORTANT IN "ECONOMY" OF OCEANS

The algae constitute the sole food of myriads of marine animals and are thus of fundamental importance in the economy of life in the sea.

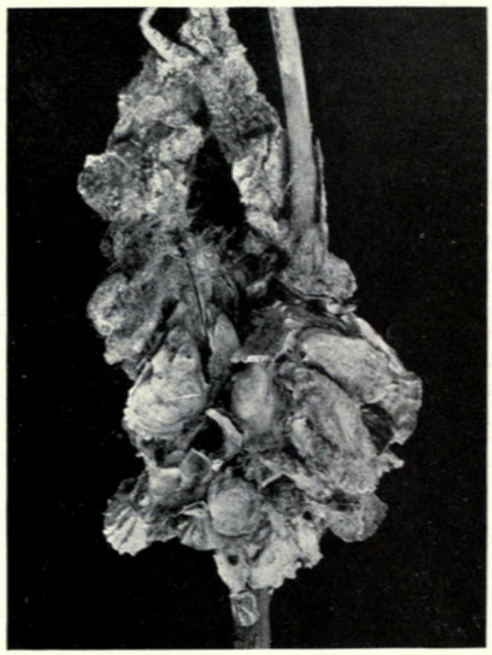
Seaweeds are useful to man in many ways. In China and Japan they are a common article of food. The bird's-nest soup of the Chinese is made mostly of algae. At least in Japan many species used as food are especially cultivated in sea-gardens. Certain red algae—dulce and Irish moss—are often used as food along the shores of the north Atlantic Ocean. Much of the iodine of commerce comes from the kelps. The egar so widely employed in bacteriological laboratories and in medicine is prepared from various seaweeds. Much interest has been shown in extracting material from seaweeds that can be used in place of rubber and plastics. Along coasts where they are plentiful the seaweeds have considerable importance as agricultural fertilizer and as a source of potash.

From the point of view of museum technique the new diorama is a notable achievement. In the hands of Chief Preparator Sella, the usual plastic materials, from plaster of Paris to lucite, employed with great skill and judgment, have served to produce a faithful replica of a bit of rocky seashore with its seaweed covering exposed at ebb-tide. Some of the purely repetitious, mechanical work required for this, as for other recent exhibits, was performed under Mr. Sella's supervision by handicraft workers furnished by the Works Progress Administration. The background was painted by Staff Artist Arthur G. Rueckert.

THINGS YOU MAY HAVE MISSED

Tree Oysters

Oysters that live in trees are a strange feature of life in the swamps of Florida. They grow in clumps or groups, attaching themselves to the roots of mangrove trees. Half of the time they are in the water, and half of the time they are high and dry, as



AMPHIBIOUS BIVALVES

These oysters, from the Florida swamps where they attach themselves to mangrove roots, live out of the water during alternate six-hour periods, when the tide is out.

the tides ebb and flow every six hours daily. Tree oysters are especially adapted for this type of living, according to Dr. Fritz Haas, Curator of Lower Invertebrates. Ordinary or normal oysters could not survive the repeated periods of dryness, although they might occasionally endure an isolated six-hour period out of the water, he says.

A small group of these odd creatures, attached to a section of mangrove as in their life habitat, is on exhibition in the Hall of Lower Invertebrates (Hall M). Those shown in the accompanying illustration will be installed at a future date. They have a distinctly plant-like appearance, resembling some sort of fungus growth. This is so marked that one of the Museum's specimens attracted the attention of a visitor to Dr. Haas's office and led him to inquire why a "plant specimen" had been transferred to the Department of Zoology.